**Sxx** **Sample Splitting**

Subclass of:

S2 Sample Taking

Scope note:

This class comprises the activity of dividing an instance of S13 Sample into new instances of S13 Sample. This activity describes cases of sub-sampling where the resulting instance maintains the characteristic qualities of the original instance. Any observations of these qualities made on the new instance also apply to the original one. This class should be used to model cases of splitting a homogenous sample into multiple ones.

Examples:

* The activity (Sxx) of removing a part from the sample (S13), which was originally taken from the tusk fragment GT993 by Godfrey et al. in 2000, in order to analyse it through ICP-AES analysis to reveal the composition of the original sample. [In 2000, Godfrey et al. (2002) took a sample from a section of the tusk fragment GT993 which was originally found in the ship-wreck of Vergulde Draeck in Western Australia. This sample was homogenous (ground to fine powder). Part of the sample was then removed for elemental analysis using inductively coupled plasma atomic emission spectrometry (ICP-AES). Another part was removed for carbon/nitrogen analysis using a LECO analyser.] (Godfrey et al., 2000)

In First Order Logic:

Sxx(x) ⇒ S2(x)

Properties:

O27 split from (was split from): S13 Sample

Oxx removed sub-sample (was sub-sample removed by): S13 Sample

**O27** **split (was split by)**

Domain:

Sxx Sample Splitting

Range:

S13 Sample

Subproperty of:

S2 Sample Taking. O3 sampled from (was sample by): S10 Material Substantial

Quantification:

many to many (0,n:0,n)

Scope note:

This property associates an instance of Sxx Sample Splitting with the instance of S13 Sample which is the original sample being split.

Examples:

* The subsampling activity by Godfrey et al. in 2000 (Sxx) split the homogenous sample (S13) [which was ground to fine powder]. (Godfrey et al., 2000)

In First Order Logic:

O27(x,y) ⇒ Sxx(x)

O27(x,y) ⇒ S13(y)

**Oxx removed sub-sample (was sub-sample removed by)**

Domain:

Sxx Sample Splitting

Range:

S13 Sample

Subproperty of:

S2 Sample Taking. O5 removed (was removed by): S13 Sample

Quantification:

many to many (0,n:0,n)

Scope note:

This property associates an instance of Sxx Sample Splitting with the instance of S13 Sample which was removed from the original sample being split. The new sample (sub-sample) maintains the characteristic qualities of the original.

Examples:

* The subsampling activity by Godfrey et al. in 2000 (Sxx) removed sub-sample the ICP-AES sub-sample (S13). [This sub-sample was used for elemental analysis using inductively coupled plasma atomic emission spectrometry (ICP-AES) to reveal the composition of the original sample.] (Godfrey et al., 2000)

In First Order Logic:

Oxx(x,y) ⇒ Sxx(x)

Oxx(x,y) ⇒ S13(y)

**Works cited**

Godfrey, I. M. et al. (2002) ‘The Analysis of Ivory from a Marine Environment’, Studies in Conservation, 47(1), pp. 29–45. doi: 10.1179/sic.2002.47.1.29.